

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 21

UNITED STATES PATENT AND TRADEMARK OFFICE

MAILED

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

AUG 30 1996

PATENT OFFICE
BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte HIDETOSHI HIRATA

Appeal No. 94-2433
Application 07/755,374¹

ON BRIEF

Before HARKCOM, Vice Chief Administrative Patent Judge, and
HAIRSTON and BARRETT, Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the final rejection of claims 3-18, all the claims pending in the application. Claims 1 and 2 have been cancelled.

¹ Application for patent filed September 5, 1991, entitled "An Apparatus for Continuous Recording and Reproducing of Data from a Magnetic Tape Cassette Comprising a Semiconductor Memory."

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The invention is directed to an apparatus and method for continuously recording and/or reproducing signals on a magnetic tape using automatic reversing. In auto-reverse operation, there is an undesirable gap in signal reproduction when the direction of the tape is reversed. The invention overcomes the problem by storing signals in a semiconductor memory in the tape cassette during the time the tape is changing direction.

Representative claim 17 is reproduced below.

17. A method of recording signals on a magnetic tape during a period just before and immediately after the direction of the magnetic tape is reversed, comprising the steps of:

- driving a magnetic tape contained in a magnetic tape cassette in a first direction;

- applying input signals to a magnetic head to record said input signals on said magnetic tape;

- detecting the presence of a first changeover signal previously recorded on said magnetic tape at a position near an end of said magnetic tape;

- interrupting recording of said input signals by said magnetic head and initiating recording of said input signals in a semiconductor memory contained in said magnetic tape cassette in response to detection of said first changeover signal, said input signals representing audio information;

- reversing the direction of said magnetic tape;

- detecting the presence of a second changeover signal previously recorded on said magnetic tape at a position near a start of said magnetic tape when said direction is reversed; and

- interrupting said recording operation of said semiconductor memory and resuming said recording by said

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magnetic head in response to detection of said second
changeover signal.

The examiner relies on the following references:

Staar	4,338,644	July 6, 1982
Himeno et al. (Himeno)	4,396,958	August 2, 1983
Vogelsang	4,796,247	January 3, 1989

Claims 3-18 stand rejected under 35 U.S.C. § 103 as being
unpatentable over Staar, Himeno, and Vogelsang.

We refer to the Examiner's Answer entered
February 16, 1994 (Paper No. 14) for a detailed statement of
the examiner's rejection.

OPINION

We reverse.

The test for obviousness is whether the references would
have suggested doing what applicants have done. In re Keller,
642 F.2d 413, 425, 208 USPQ 871, 881-82 (CCPA 1981). We find
ourselves in basic agreement with appellant that the references
do not suggest the claimed invention and that the examiner has
exercised hindsight in combining the references.

Staar discloses a magnetic tape cassette with a
semiconductor memory circuit for storing various kinds of fixed
information, such as the type of cassette, its length, magnetic
bias and equalization value, titles of the recordings, etc.,
and information which changes or which the user may desire to
change, such as the instantaneous position of the tape, the

locations of different recorded programs, etc. (column 1, lines 21-33). Staar does not suggest using the memory for storing audio information and does not disclose auto-reverse operation.

Hemeno discloses a tape recorder with an auto-reverse system. The auto-reverse system has "a tape end detector sensitive to a tape end, for example, by sensing an electrically conductive part provided at the tape end" (column 1, lines 19-21). The switching circuit in Hemeno includes a manually operative switch for selectively switching the auto-reverse system between operative and inoperative (abstract). Hemeno does not suggest that there is any problem in the auto-reverse operation.

Vogelsang discloses a compact disc player that compensates for tracking jumps due to mechanical shock and vibration using a memory buffer to provide continuous audio output. Blocks of digital data are written to an intermediate storage memory 31. The memory capacity is such that continuous read-out of data is insured from the time tracking is lost up to the time tracking is restored. When a tracking loss signal is present, writing of data is blocked. When the tracking is reacquired, the memory is refilled at a higher rate to be able to compensate for further tracking losses (column 9, lines 38-58).

Initially, we agree with the examiner's conclusion that it would have been obvious to modify the tape drive system in

Staar to have an auto-reverse with tape end changeover detector in view of the teaching in Hemeno that auto-reverse systems are common and well known.

The examiner's reasoning with respect to Vogelsang is as follows (Examiner's Answer, pages 5-6):

Vogelsang teaches in column 2, line 66 through column 3, line 34, a switching, predicated on the output of a sensor, from reproducing audio signals directly from a recording medium to reproducing audio signals from a buffer memory, until the sensor determines that accurate reproduction from the recording medium is possible again and thereby provide continuous system operation. A recording method is considered analogous. If the sensor determines that accurate recording of information to the recording medium is not possible then the incoming information, to be recorded on the recording medium, is stored in the buffer memory until the sensor determines that recording to the recording medium is possible again.

Additionally, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Staar and Himeno et al. by using a buffer memory to enable continuous reproduction of audio signals as taught by Vogelsang in order to create an apparatus for continuous system operation.

The examiner misapprehends the teaching of Vogelsang.

Vogelsang does not switch between reproducing signals directly from a recording medium and from a buffer memory. If it did, the examiner's analysis would have been more compelling. The memory 31 in Volgelsang is included in the path of the signal (column 5, lines 60-62), so all of the signals are stored in the intermediate storage of the memory and reproduced from there. The memory has a capacity that permits continuous

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read-out of data while the system is restoring tracking and acts as a buffer between the data read from the CD and the output. The signal from the tracking loss detector 40 determines whether data is written to the memory or is blocked (column 7, lines 38-43), not whether the signals are reproduced directly from the recording medium or the memory.

Vogelsang is directed to a system in which the data is always read out of the buffer memory for playing and all the data is derived from the CD. Vogelsang does not switch between reproducing signals directly from a recording medium and from a buffer memory. None of the references suggests the idea of recording some of the information on one kind of media and some of the information in a semiconductor memory to compensate for a gap in recording during a tape reversal or for any other reason. Accordingly, we find no motivation to modify the combination of Staar and Himeno to store audio data in the semiconductor memory during a tape reversal.

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For the reasons discussed above, the rejection of claims 3-18 is reversed.

REVERSED

Lang V. Forks

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Vice Chief Administrative Patent Judge

Kenneth W. Hairston

KENNETH W. HAIRSTON
Administrative Patent Judge

Lee E. Barnett

LEE E. BARRETT
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